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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,273

03/17/2005

Denis Jouaffre

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EXAMINER

WILKINS III, HARRY D

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/528,273	<b>Applicant(s)</b> JOUAFFRE ET AL.	
	<b>Examiner</b> Harry D. Wilkins, III	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/17/05</u> .   | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sorlie et al's book "Cathodes in aluminum electrolysis" (submitted on Applicant's information disclosure statement filed 17 March 2005).

Sorlie et al teach (see pages 77-80) a method of preheating a pot provided with anodes and cathodes for the production of aluminum by electrolysis. The method of preheating included a first step of placing a layer of coke into the pot prior to the start of current. The layer of coke constituted a granular graphite-based conductive material. Further, Sorlie et al teach (see page 79 and figure II-2b) that instead of a single layer of coke, the coke could be arranged as ridges or cones piled under each anode block, and it appears that there are at least 2 piles under each anode, with at least a portion of each anode not touching the coke underneath. Next the anode was dropped into the cell (i.e.-crushing the granular material between the anode and cathode). Finally, current was started to begin preheating of the pot.

It is noted that "coke", as disclosed by Sorlie et al, refers to a highly carbonaceous material. Coke does not have a set crystal structure. However, to at

least some degree, coke would contain some graphite, even if in minor amounts, such that it reads on a graphite-based material.

Regarding claim 10, Sorlie et al teach (as above) forming a layer of granular coke over a part of the surface of the cathode, dropping each anode on to the granular coke, establishing an electrical connection (retightening clamps) between the stem of each anode and the anode frame and energizing (current cut-in) the pot so as to cause an electric current to flow between the cathode and the anodes.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-6, 8, 11-14, 17-18 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Sorlie et al.

Regarding claims 2 and 3, although Sorlie et al do not teach the amount of coverage provided by the coke, absent a showing of unexpected results, it would have been considered within routine optimization by one of ordinary skill in the art to have established a proper amount of coverage.

Regarding claim 4, although Sorlie et al appear to only disclose 2 piles underneath each anode, absent a showing of unexpected results, it would have been considered within routine optimization by one of ordinary skill in the art to have established a proper number of piles of coke.

Regarding claims 5 and 12, generally, when a granular material is dropped from above onto a pile, the outer edges of the pile form an approximately circular area. Thus, absent a showing of unexpected results, it would have been considered that the piles of Sorlie et al would have been shaped to be generally circular in shape.

Regarding claims 6, 13 and 14, although Sorlie et al do not disclose the thickness of the coke piles, absent a showing of unexpected results, it would have been considered within routine optimization by one of ordinary skill in the art to have established a proper thickness of the piles of coke to establish conductivity.

Regarding claims 8, 17 and 18, although Sorlie et al do not discuss the size of the granular coke utilized in the process, absent a showing of unexpected results, it would have been considered within routine optimization by one of ordinary skill in the art to have established a proper size of granular coke.

Regarding claim 11, although Sorlie et al do not discuss the shape of the coke piles utilized in the process, absent a showing of unexpected results, it would have been considered within routine optimization by one of ordinary skill in the art to have established a proper shape of the coke piles.

Regarding claim 20, Sorlie et al teach (as above) forming a layer of granular coke over a part of the surface of the cathode, dropping each anode on to the granular coke, establishing an electrical connection (retightening clamps) between the stem of each anode and the anode frame and energizing (current cut-in) the pot so as to cause an electric current to flow between the cathode and the anodes.

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5. Claims 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorlie et al in view of Takada (US 4,800,102).

Sorlie et al are silent with respect to how the coke piles are formed.

Takada relates to a method of depositing particulate matter in a desired pattern by utilizing a template (1) placed over the deposition spot including orifices that correspond in shape to the formed depositions.

Therefore, since Sorlie et al was silent with respect to how the coke piles were deposited, it would have been within the knowledge and ability of one of ordinary skill in the art to seek out conventional machinery for performing that deposition, such as that disclosed by Takada, for depositing powdery material in a specific pattern on a substrate.

6. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorlie et al in view of Homley et al (US 6,231,745).

Sorlie et al teach using coke, and do not teach adding an additional material to alter the conductivity.

However, Homley et al teach (see col. 12, lines 51-59) that it was known that differing material content in graphite materials altered the electrical conductivity in the art of aluminum production by electrolysis.

Therefore, it would have been obvious to one of ordinary skill in the art to have added an additional material to the coke of Sorlie et al in order to adjust the conductivity of the individual coke piles as necessary.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1795

hdw